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Janet Fender

AFRL's Janet Fender: A profile in excellence

by John Brownlee, Space Vehicles Directorate

KIRTLAND AFB, Albuquerque, N.M. — Janet Fender is currently the Air Force Research Laboratory's Chief Scientist for the Space Vehicles Directorate at Kirtland Air Force Base. She is a member of the Scientific and Professional cadre of the Senior Executive Service. Fender is the top scientific advisor for research, development, and transition of space and ballistic missile technology for the Air Force.

Internationally acknowledged for her research and development of imaging and optical sensing technologies, she holds several patents, has published many technical articles, and is a frequently invited speaker at technical conferences. She was selected as the U.S. member of the United Nation's space surveillance expert group establishing international policy for arms control in space. Fender is past president and a fellow of the Optical Society of America, a fellow of the International Society for Optical Engineering, and serves on the Board of Directors for the American Institute of Physics.

Q. What does it take to succeed—especially if you are a woman—in today's fast-paced, highly competitive world of research science and engineering?

A. In the 20 years that I've been here at the laboratory, there has been an ongoing interest among media and professional societies to single out prominent women and who have achieved something professionally. They typically focused on the individual. But, success is always teamwork, never just one person. An individual might gain recognition for accomplishment, but rarely is that accomplishment achieved alone.

We must also develop an appreciation for gathering people with different skills and talents.

Q. How effective is mentoring today?

A. To some degree, after years of mentoring and networking, women have been largely accepted in the workplace and now, because of that, are more visible when it comes to moving through the ranks of corporate America, as well as in high-level government positions. But, that said, I have also noticed that our young female lieutenants coming up do not want to be singled out. They do not want to be mentored. Where mentoring might have been important to their mothers, many of today's young professionals do not feel that they need special attention. To me, that is a sign that social norms regarding women in the workplace have become more embedded, what was once novel is now fairly commonplace. And I see that in the new female employees here in the Lab.

Q. What is the biggest challenge you face now when trying to attract top-notch employees?

A. Our biggest challenge right now is encouraging a diverse workplace rather than like-minded people hiring people just like them. Where is the diversity in hiring someone just because they happen to think like you do? A leader, under those circumstances, is not really tapping into the most creative stream of applicants available. General George S. Patton's observation that "No one is thinking if everyone is thinking alike" is right on the money. The biggest risk you run into is "group think," where everyone thinks the same way. That, in and of itself, severely limits the creative process by diluting ideas. It can also be dangerous.

In fact, some reviewers of the 1986 Challenger disaster have blamed the so-called group think mentality for launching the Space Shuttle that fateful date when conditions were less than ideal. A close-knit, like-minded team made that choice. Group think is the same dynamic that influenced JFK's disastrous involvement in the 1961 Bay of Pigs fiasco in Cuba. History can be a stern teacher if we do not pay attention.

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Q. So what's the answer?

A. Diversity is crucial. But it is often approached as differences in appearance, that is, gender, ethnicity, age, and so forth. But in my mind, diversity, when it comes to hiring lab employees, really means having different ideas and problem solving skills.

Diverse thinking is what is needed, especially here at AFRL where we deal with overcoming the complex scientific and engineering problems posed by the universe.

We of course must work toward our ultimate goal—here, it is developing space technology for the warfighter—which is the mission of this Directorate, but, if you do not look after your people, efforts to complete your mission will eventually fail. It is, again, people, individually and in groups, who do the work and claim the success, under good leadership. If you care about the mission, you have to care about the people assigned to complete that mission. There is no other way to see it.

Q. What advice do you have for young scientists and engineers coming on board?

A. Exploit the many opportunities available and ACT on them. We are given serious problems to solve. These are real pathways, not only for success, but to excel. We do not chase after some one else's solution here—we find new ones to long-term existing scientific problems.

If a young researcher has the will to seize the moment, government bureaucracy does not always present a problem. I tell them to look for teams that are risk takers and creative, searching for new ideas.

Look to become part of new technology and its development. After all, throughout history, it has repeatedly been technological advancement under inspired leadership that has dominated the forces behind change. Finally, recognize opportunities, find the right team, and act. ACT. You must actually do something. That is how a young researcher today can find rewarding success in government labs today.

Q. Any memorable role models in your life?

A. Role models? My mother. She was an Army captain in WWII, a nurse. She was with General George S. Patton in North Africa serving the wounded in field hospitals. She landed at Anzio. My mother saw the world as it was. She was a realist, and I suppose I get that from her.

My dad was a great role model for me. I remember complaining to him when I was at first intimidated and overwhelmed with my doctoral dissertation topic, "Dad, it's so hard!" He smiled and said simply, "Janet, it is a challenge! If it could have been done easily—someone else would have already done it!" His common sense, down-to-earth sentiment really turned my life around!

Q. Would you like to share some words of wisdom before we conclude this interview?

A. I encourage our young scientists and engineers to think of perceived obstacles as the challenges that they really are. Yes, they are hard! But, once you are in a team situation and feel the exhilaration of accomplishment over a terribly difficult task and the group has been creative, it is such a rush! Such a thrill that it inspires the team to pursue with excitement the next challenge, no matter how insurmountable the problem may first appear.

Mount Everest was not conquered by the uninspired. The transcontinental railroad was not built by the feint-of-heart. What once might have seemed to be science fiction, is now a daily way of life. Think how that Apollo team must have felt when Neal Armstrong set his foot on the moon in 1969. Once you see that it can be done—the creative pump is primed and there is no going back. Ever. Ever. Human creativity! It is the most powerful force on Earth. @